# PARTNERSHIP FOR GROWTH

## Ghana – United States Annual Scorecard

**March 2013 - February 2014**

**MARCH 2014**

Ghana

2013-2018

# PARTNERSHIP FOR GROWTH

## Ghana – United States

## Twelve Month Scorecard

**March 2013 – FEBRUARY 2014**

## Overview

| Constraint 1: Unreliable and inadequate supply of electric power | Score [MARCH 2014] |
|---|---|
| Goal 1. Policy, Strategy, and Planning<br>*Development of energy sector plans, policies, and strategies to improve private investment in the power sector and develop a transparent framework for natural gas resources* | ***Behind Schedule*** |
| Goal 2: Institutional, Regulatory and Structural Reform<br>*Strengthen institutional, regulatory and structural reform to enhance the financial viability, operational efficiency, and sustainability of power sector utilities* | ***On Track*** |
| Goal 3: Electricity Demand and Generation Capacity<br>*Improve energy security and growth through expansion and diversification of supply to include gas and renewable energy* | ***On Track*** |
| Goal 4: Transmission and Distribution Infrastructure and Operations<br>*Improve utilities' performance and infrastructure, reliability of supply, and ability to support demand growth* | ***Behind Schedule*** |
| Goal 5: Rural Access<br>*Improve rural access to power and effective management thereof* | ***Ahead of Schedule*** |
| **Constraint 2: Lack of Access to Credit** | |
| Goal 1. Reduce Government Engagement in the Banking Sector | ***[Insert Color and Rating]*** |
| Goal 2. Strengthen Financial Sector Regulation and Supervision within Financial Sector | ***[Insert Color and Rating]*** |
| Goal 3. Develop the Financial Sector Infrastructure | ***[Insert Color and Rating]*** |
| Goal 4. Broaden and Deepen the Financial Sector | ***[Insert Color and Rating]*** |
| Goal 5. Encourage development finance and support SME Access to finance | ***[Insert Color and Rating]*** |

| Score | | | |
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| | | | |
| Behind Schedule | On Track | Ahead of schedule | Completed |

## *Introduction*

*Partnership for Growth (PFG) is a partnership between the United States Government (USG) and a select group of countries to accelerate and sustain broad based economic growth through engagement with governments, the private sector, and civil society. It seeks to replace the traditional donor-recipient model of international development assistance with a partnership based on mutually-agreed upon actions and commitments. Ghana is one of four PFG countries in the world selected for the PFG program.*

*The U.S.-Ghana PFG Statement of Principles was signed on March 1, 2013 aims to rapidly expand broad-based, inclusive economic growth in Ghana under an overarching commitment to democracy, sustainable development, and human rights through a series of coordinated actions over a five-year period. The JCAP identifies two binding constraints to economic growth in Ghana: unreliable and inadequate supply of power, and lack of access to credit. To address these constraints, the JCAP contains ten goals, and within each goal are specific sub-goals and lines of action. Each government has identified implementation teams that meet regularly to develop strategies, identify challenges and opportunities, exchange information, and address other relevant operational considerations. The JCAP remains flexible and will be reviewed annually in order to make course corrections and adjustments for subsequent implementation, as agreed to by the Government of Ghana (GOG) and the USG.*

*The JCAP includes a rigorous Monitoring and Evaluation (M&E) process. This process is meant to evaluate progress on each constraint to growth, as well as the PFG effort as whole, and includes the following activities: semi-annual performance reporting that is public and based chosen indicators and benchmarks; an annual high-level bilateral review that is accompanied by a public forum, and a rigorous mid-term and final implementation evaluation conducted by a third-party.*

*The attached report is the first in a series of scorecards designed to report to the public on goal-level progress of the Partnership for Growth. The M&E process calls for semi-annual reporting of scorecards. For Year #1 (March 2013 – February 2014) only one scorecard assessment was undertaken. In subsequent years the semi-annual requirement will be adhered to. This scorecard reports on both existing programs of cooperation of the United States and in Ghana as well as on new initiatives. The descriptors "Ahead of Schedule," "On Track," "Behind Schedule," or "Completed," will be used in the reports to characterize progress made toward meeting each goal and a narrative justifying the score assigned will accompany each goal. The narrative is not intended to examine all actions taken under each goal, but to identify actions, events, and developments that helped determine the score. One or more performance indicators have been chosen as the principle, but not the exclusive basis for evaluating progress on each goal. Other factors, consistent with an evaluation of progress made toward completing the objectives, may be considered in each evaluation.* ***Definitions and details on the indicators chosen can be found on M&E Addendum to the JCAP.***

*Several goals have performance indicators tied to measurement of public perceptions or impacts on the private sector and citizens. The U.S. and GOG are currently finalizing the mechanisms to capture the public and private perception and impact data required to begin a baseline analysis, and the governments expect this data to be included in subsequent scorecards.*

*Partnership for Growth is a new experience for both governments through which the foundation for proper coordination and project implementation is being jointly established. The M & E addendum is consistent with the work plans for each line of action. The success of PFG will be determined by the extent to which it promotes broad-based private sector-led economic growth in Ghana through the actions outlined in the JCAP.*

## PFG PROGRAM GOALS

**Key Indicators**

- GDP growth (G1)
- Private Fixed Investment as a percentage of GDP (G5)
- Ease of Doing Business Score (G6)

Ghana's economy continues to develop at a brisk pace, with Gross Domestic Product (GDP) increasing an average of 8% since 2008, and an unprecedented 15% in 2011, due to commencement of full scale production of its offshore petroleum and natural gas reserves. As a consequence, Ghana was ranked as the fastest growing economy in 2012, far surpassing its African counterparts to top the global rankings. While growth in GDP in 2012 and 2013 fell short of targeted levels, the country's economy continued to expand at an average rate of 7%, maintaining its position as one of the fastest growing global economies.

As a consequence of its continued growth and development, the average household income in Ghana has increased significantly, resulting in the country attaining "*lower middle income*" status according to the 2013 survey by the International Monetary Fund (IMF).

Foreign Direct Investment (FDI) as a percentage of GDP in Ghana according to the World Bank's development indicators was stable between 2011 and 2012 at 8.1%. Though this was a positive aspect of Ghana's economic picture, actual GDP growth in 2013, estimated by IMF at 5.5%, was off its 8.0% target. Budget deficits and macroeconomic imbalances were largely responsible. As a consequence, Ghana was downgraded in 2013 by international credit rating agencies - Moody's Investors Services and Standard & Poor's Rating Services. In its 2014 budget, the Government of Ghana (GOG) enumerated a number of fiscal policies aimed at curbing the budget deficit and stimulating growth by increasing revenues and focusing expenditures in the most productive sectors of the economy.

Potentially impacting this positive trend, as a consequence of its budgetary fiscal deficits and other economic factors, The Government of Ghana has implemented a number of changes directed at reversing the current budgetary situation, the effectiveness of which will only be seen over time.

According to World Bank's annual survey, based on the "Ease of Doing Business Index", Ghana improved its ranking from 77$^{th}$ to 67$^{th}$ position out of a total of 189 countries included in the survey from 2010 to 2011. This trend was enhanced to some degree by a slight increase in Ghana's "Distance to the Frontier" measurement of 66.98 in 2014, up from 66.70 in the prior year.

| MACRO CONSTRAINT<br>Unreliable and Inadequate Supply of Electric Power | |
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**Key Indicators:**

- Percentage of firms citing electricity as a major obstacle to doing business (P1)[1]
- Sale losses due to power outages (P2)[2]
- Diesel fuel consumption of firms (P3)[3]
- Electric power consumption per capita(P4)
- Number of Customers, by ECG and NEDCo (P5A-B)

**P.1 –P.3** We have no 2013 data for indicators P1-3. In the absence of any recent World Bank Enterprise Survey, the joint PFG Coordinating Committee and power technical team determined that a 'special PFG survey' will be undertaken in Year 2 to obtain values for these indicators and to understand the causal linkages of JCAP activities to any changes in these values.

**P.4** National targets for total energy consumption and per capita consumption for 2013 were 13,721,600,000 kilo-watt hours (kWh) and 556.46 kWh, respectively. However, the actual energy consumed in the nation as a whole was 12,927,020,000 kWh, with corresponding per capita consumption of 524.26 kWh. The negative variance of actual to target (6%) was primarily due to a shortfall of generation from thermal sources. Thermal energy generation was negatively impacted during most of 2013 as a consequence of the rupturing of West African Gas Pipeline (WAGP), which occurred in July 2012 and continued until August 2013.

In 2013, electricity consumption per capita in the NEDCo service area dropped more sharply by around 34% below the 2012 baseline value (321.2kWh vs. 486.6 kWh). This sharp reduction despite an increased customer base reflects additional NEDCo's challenges in supplying power when generation is far below demand (load shedding) and lower income families – the bulk of NEDCo's customer base - reducing their consumption even when eligible for a 'life-line' tariff.

**P.5** A majority of new connections and customers were located in peri-urban areas. A significant number of customers were also connected through the rural electrification projects such as Ghana Energy and Development Access Project (GEDAP) grid extension and intensification projects, as well as the Self Help Electrification Project (SHEP). It is expected that the customer base will continue to grow throughout the partnership period.

Within the service territory of Energy Company of Ghana (ECG), which includes approximately 2.61 million customers in southern Ghana, total and per capita energy consumption increased approximately 4% in 2013. NEDCo had 517,711 customers at the end of 2013, an approximate 15.8% increase over the 2012baseline value of 447,000. This substantial increase is due principally to the on-going electrification projects sponsored by the GOG in NEDCo's operational Area. For example, 34,390 SHEP customer connections were completed in 2013, and this constitutes about 49% of all new customer connections during the year.

[1] World Bank Doing Business or PFG sponsored survey.
[2] Ibid.
[3] Ibid.

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| **GOAL 1. POLICY, STRATEGY, AND PLANNING - support the continued development of energy sector plans, policies, and strategies to improve private investment in the power sector and to develop a transparent framework for natural gas resources**<br><br>**1A**. Cohesive power sector reform strategy which provides an overarching framework for improving utility operational and financial performance developed and implemented<br><br>**1B**. Long-term reliable gas supplies available for the operation of thermal power plants with a transparent framework for gas pricing and allocation developed and implemented<br><br>**1C.** Implementation of an integrated power sector master plan that builds upon existing sub-sector master plans and provides guidance for future investment plans<br><br>**1D.** Clear public policy and framework implemented for private sector participation in the power sector | ***Behind Schedule*** |

**Key Indicators:**

- Consistent adherence or progress on implementation of sector policy and strategy milestones (P6)
- Proportion of gas-based generation as a percentage of thermal generation (P7)
- Absolute value and ratio of private versus public investment in electricity (P8A-B)

**P.6** During the reporting period, the PFG/JCAP served as a frame of reference that sharpened the dialogue and deepened understanding of necessary reforms. Its activity matrix was a road map that guided implementation of the reform agenda. The GOG and USG mobilized an array of resources to resolve the Macro Constraint. For the USG, these resources came mainly under the 'Power Africa' initiative as well as in the form of wide-ranging assessments supported by the Millennium Challenge Corporation (MCC) in consideration of a second Compact with Ghana in the power sector.

Ghana's power sector policy and strategy focus has been to attract private sector investment into the generation sector as Independent Power Producers (IPPs) and to restore the financial health of the national power sector utilities through performance improvement and cost reflective tariffs. Key elements of this policy are increases in power tariffs and the restoration of the automatic tariff adjustment process. Though implementation of this policy has led to the issuance of 26 provisional IPP licenses since 2012, it has not done enough to attract private capital to Ghana's energy and power sectors.

A number of sector policy milestones have suffered from some delay due in part to the large volume of activity currently underway in the energy sector. The review of the power sector policy was expected to be completed last year but is currently being finalized, while the resolution of the handling of Ghana's legacy hydro resource is also behind schedule.

**P.7** The total amount of electricity generation from gas-based generating facilities for 2013 was targeted to be 4,982,000,000 kWh, compared to generation from all thermal sources of 6,419,600,000 kWh, a ratio of 77.6%. The actual percentage of all thermal generation accounted for by gas-based generation was 55.8%. The significant difference between 'planned' and 'actual' was the result of the rupture of the WAGP for eight months during 2013

as well as the delay in the construction of the gas processing facility for the gas coming for the Jubilee offshore basin.

Gas deliveries through WAGP have resumed, but current flows fluctuate between 30 and 60 MMSCFD, and are far below the foundation volume of 120MMscfd. Another constraint to thermal generation is the delay in bringing lean associated gas from the Jubilee field to power generation plants. Some expansion in generation is projected for 2014, mainly from the Bui hydro plant and some increase in per capita energy consumption is anticipated.

The delay in completing the Western Corridor Gas Infrastructure project and the continuing poor reliability of gas supplies from Nigeria has also meant that the proportion of power generated from gas has remained below expectations. However, steps are being taken to ensure that the Western Corridor Gas Infrastructure is commissioned by the end of 2014. Other issues contributing to the delay in the supply of natural gas to power plants are related to institutional, commercial and financial gaps in the gas supply chain. An intensive technical assistance program to resolve these issues was initiated early in 2013 and continues to the present.

The flow of gas through the WAGP is expected to remain far below foundation volumes. This combined with the expected flow of gas from the Jubilee field will still not enable Ghana's thermal generation to be mainly gas-based. Liquid fuel, principally light crude oil (LCO) is expected to remain a significant component of Ghana's thermal generation for the next 4 years – until domestic gas from other fields come on-stream.

**P.8** Throughout 2013 the majority of investment in the energy and power sectors came from public sources. There has been some direct foreign private investment in energy along with investments by the national social security fund, both of which have financed generation facilities. Donor agency grants and commercial bank loans have also supported fuel supply, generation, transmission and distribution.

It is still desired that the substantial amounts of capital required by the electricity sector come largely from private investment. Yet, private capital still appears to be reluctant to invest until the creditworthiness of the Electric Company of Ghana (ECG) and the Northern Electricity Distribution Company (NEDCo), the nation's off-takers and distributors of electric power are demonstrable.

And other reforms have also been made across the energy-to-power supply chain. These reforms include: a transparent framework for the development and management of natural gas resources; a least-cost, transparent process of competitive bidding for power generation; and, the allocation and pricing of legacy hydropower. An overarching energy strategy, and gas and power sub-sector master plans are also needed to provide the long-term vision and promote the stability that are required to attract private investment.

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| **Goal 2: Institutional, Regulatory and Structural Reform - enhance financial viability, operational efficiency, and sustainability of power sector utilities**<br><br>2A. Clear and distinct roles and responsibilities of policymaking, regulation, ratemaking, ownership, and operations in the gas sector<br><br>2B. Well-functioning processes of policymaking, regulation, and ratemaking that serve to attract investment into the sector and improve delivery of service and needed maintenance<br><br>2C. Improved management, operations and financial viability of operating entities in the power and gas sectors | ***On Track*** |

**Key Indicators:**

- Cost recovery of tariff (P9)[4]
- Average selling price of electricity (P10 A-B)
- Consistent application of automatic tariff adjustment schedule (P11)

**P.9** During 2013, Ghana made significant strides towards the goal of implementing cost reflective tariffs. In October 2013, after more than a year without an adjustment in tariff rates, the Public Utility Regulatory Commission (PURC) approved and gazetted a rate increase of 78.9%. The electric utilities had requested over 250% hike in tariffs, but the PURC agreed to increase tariffs by an average of 150% spread over a period of one year. This took cognizance of the impact a one-time increment would have on consumers. As a consequence, the 78.9% increase was approved as the first of planned quarterly increments. However, prior to implementing this new tariff, public outcry protesting the magnitude of the approved increase compelled GOG to direct that the initial increase should be limited 59.1%.

**P.10** The impact of the tariff increases has been significant, both on the distributors and the customer base, particularly that of NEDCo. The average selling price of electricity for 2013 was however $0.1236 /kWh. For 2013, ECG realized $0.132/kWh compared to the baseline of $0.1199/kWh during the prior period representing, a 10.1% increase, reflecting the higher tariff achieved for the last quarter of the year. At the same time, NEDCo realized $0.1151/kWh in 2013 compared to $0.134 for the 2012 prior period baseline, representing a 15.5% drop in revenue per kWh. As noted, the results at NEDCo reflect the high proportion of lower income customers, who are on the below cost 'lifeline tariff" ( for those with monthly consumption not exceeding 50kWh).

**P.11** Equally important as the one-time increase was the resumption of the Automatic Adjustment Formula (AAF) which takes into account changes in exchange rates and fuel prices on a quarterly basis. The first such automatic adjustment went into effect January 1, 2014 with an increment of 9.73% for the first quarter of 2014, resulting in a gross tariff increase of about 74.6% since October 2013.

[4] Percentage of generation, transmission and distribution costs recovered through tariff

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| **Goal 3: Electricity Demand and Generation Capacity - support GoG capacity to improve energy security and growth through expansion and diversification of supply to include gas and renewable energy**<br><br>3A. Prepare demand outlooks based on sound economic planning and modeling and which take into consideration efficient use of energy<br><br>3B. Expand generation to meet demand for power (including acceptable reserve margins) so as not to hinder economic activity and growth (expansion plans should consider demand side management and exploit environmentally friendly and sustainable options for power generation<br><br>3C. Further diversify generation types (including renewables) to minimize risks from low rainfall, fluctuations in oil prices, and other external shocks | ***On Track*** |

**Key Indicators:**

- Megawatts of new IPP generation (P12)
- Electricity demand coverage ratio (P13)

**P.12** At the end of 2013, independent power producers (IPPs) had installed a total of 546 MW of production. In addition, one of these IPPs had achieved financial closure on a planned 110 MW generation capacity expansion project, whilst four new IPPs that were still developing their power projects had reached an advanced stage (i.e., obtained siting clearance and signed Power Purchase Agreements with an off-taker). These four IPPs plan to install 1,073MW of generation capacity. Beyond these projects, there are 23 provisionally licensed IPPs that are making efforts to secure PPAs and the financing that would enable them to move forward with their projects.

According to statistics released by the Ministry of Energy and Petroleum (MOEP), electricity consumption grew by 12.1% between 2009/10, 10.8% between 2010/11 and 7.3% between 2011/12. The 2012/2013 period registered a rather higher growth of 12.4% which corresponds to increase in demand of 214 MW. This growth in consumption was spurred by both economic growth and increasing household incomes, the MOEP has estimated that Ghana needs to add approximately 200 MW of generation capacity every year to meet the projected growth in demand.

**P.13** In 2013, the target demand coverage ratio of installed generation capacity to peak demand was set at 141% based on projected peak demand of 2,016.4 MW. The actual ratio for 2013 was 146% with recoded peak demand of 1,947.2 MW. While this result might convey the impression that targeted reserve capacity was achieved, a number of the plants were unavailable, leading to load shedding.

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| **Goal 4: Transmission and Distribution Infrastructure and Operations - improve utilities' performance and infrastructure, reliability of supply, and ability to support demand growth**<br><br>4A. Improved network operations to meet suppressed demand and forecasted growth and improve quality of supply<br><br>4B. Increased efficiency and cost effectiveness of transmission and distribution assets<br><br>4C. Improved financial viability of companies in the sector<br><br>4D. Reduce commercial losses<br><br>**(Still Under Review)** | ***Behind Schedule*** |

**Key Indicators:**

- Operating cost coverage for state owned utilities (P14A-D)
- Quick ratio ECG (P15)
- Aggregate Technical, Commercial and Collection Losses, by ECG and NEDCo (P16A-B)
- Transmission losses GRIDCo (P17)
- Total duration of outages, by rural, urban, ECG and NEDCo (P18A-F)
- Frequency of outages rural, by rural, urban, ECG and NEDCo (P19A-D)

**P.14** **Operating Cost Coverage Ratio**. In 2013, GRIDCo's actual operating cost coverage ratio (total annual operational revenues / total annual operating costs) was 115%, substantially less than the 203% projection. Several factors contributed to the under-performance: overall increased load on the grid, sub-optimal generation dispatch and an approved Transmission Service Charge (TSC) which was less than the level requested (13.5% vs 39.5%).

The operating cost coverage ratio at ECG decreased from 120% in 2008 to 111.5% in 2012, with this trend expected to continue in 2013 due to the impact of load shedding induced by generation shortfalls in 2012/13. Harsh macroeconomic conditions during the first quarter of 2014 may have a further negative impact on ECG's ability to cover its operating costs in 2014.

At NEDCo, the operating cost coverage ratio for 2013 fell below the baseline value of 87.3%, ending the year at 73.8 %, a 16% negative variance from the baseline value. The drop in operating cost coverage can be attributed to the addition of more Self-help Electrification Programme (SHEP) customers to the network which extended coverage without a commensurate increase in revenue since SHEP customers tend to be located in areas of lower energy consumption.

**P.15** **Quick Ratio at ECG.** ECG's current and quick ratios declined in both 2011 and 2012, falling below one in both years, reflecting the fact that ECG was unable to cover short-term liabilities when due. ECG's short-term liabilities increased rapidly during the period as a result of the unfavorable environment of increased costs and the negative impact of inflation on tariffs. To improve its financial position, ECG is currently focusing on limiting short term debt while simultaneously working to restructure existing short term debt to longer tenor maturities which is expected to improve the outlook for the quick ratios in future periods.

**P.16** **Aggregate Technical, Commercial and Collection Losses (ATC&C).** ATC&C at ECG dropped from the baseline of 43% in 2011 to 39.28% in 2013. The decrease in system losses (Technical & Commercial) was due to improved accounting for street lighting consumption. This downward trend in losses is expected to continue as ECG makes capital investments to improve distribution infrastructure and checks commercial and collection losses. NEDCo also reported a decrease in ATC&C from a baseline of 38% in 2011 to 28.55% in 2013. This improvement was mainly the result of GOG clearing arrears which increased the collection rate to 180% for Q4 of 2013.

**P.17** **GRIDCo Transmission Losses.** GRIDCo's transmission losses for 2013 were 4.5% compared to a projected value of 4% of total generation. This result was worse than the baseline value of 4.22% established in 2012 and a 26.8% negative variance against 2013 target of 3.5%. This increase in transmission losses was attributable mainly to the non-optimal generation dispatch due to very low availability of the generating plants in Western Ghana which resulted in increased losses on the grid. Additional contributing factors included the general increase in system demand and the delay in completion of ongoing grid expansion/reinforcement projects.

**Outages – Urban & Rural.** For the reporting period the chart below presents an Analysis of Outages, illustrating the Total Duration of Unplanned Outages in hours as well as the Frequency of Unplanned Outages for both Rural and Urban Areas.

**Analysis of Outages for 2013**

**Total Duration of Outages Per Customer Per Occupational Year (Unplanned)**

| | Rural | | | | | | Urban | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2013 | | % Variance of Actual to: | | | | 2013 | | % Variance of Actual to: | |
| | Baseline | Baseline Year | Target | Actual | Baseline | Target | Baseline | Baseline Year | Target | Actual (2012) | Baseline | Target (2) |
| National | 116.2 | 2010 | 174 | (1) | (1) | N/A | 76.4 | 2010 | 48 -- 72 | (1) | N/A | N/A |
| ECG | 185 | 2011 | TBD | 229.3 | -23.9% | N/A | 68 | 2011 | 49 -- 72 | 221 | -225.0% | -265.3% |
| NEDCo | 106 | 2011 | 174 | 74.6 | 29.6% | 57.1% | 102 | 2011 | 50 -- 72 | 40.6 | 60.2% | 33.4% |

**Frequency of Outages per Customer per Occupational Year (Unplanned)**

| | Rural | | | | | | Urban | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2013 | | % Variance of Actual to: | | | | 2013 | | Variance of Actual to: | |
| | Baseline | Baseline Year | Target | Actual | Baseline | Target | Baseline | Baseline Year | Target | Actual (2012) | Baseline | Target (2) |
| ECG | 293 | 2011 | TBD | 267.6 | 8.7% | N/A | 282 | 2011 | TBD | 256.38 | 9.1% | N/A |
| NEDCo | 83 | 2011 | TBD | 106 | -27.7% | N/A | 50 | 2011 | No Target | 59 | -18.0% | N/A |

(1) National statistics can not yet be determined until receipt of information from ECG.
(2) The "Percent Variance to Target" is calculated based on the midpoint of the indicated "Target" range.
N/A -- Not Available as a consequence of a missing "Target" or "Baseline"; TBD -- To be determined

**P.18** **Duration of Outages – Rural and Urban.** The duration of unplanned outages in ECG's rural service territories increased to 229.3 hours in 2012 compared to the baseline of 185 hours in 2011, a 23.9% negative variance. This reduction in service resulted from the fact that a large

number of additional rural customers were connected, introducing additional load points which contributed to outages on radial feeders that were already over loaded. In addition, travel times to fault locations for restoration purposes in rural locations are particularly lengthy due to the poor condition of most rural roads. ECG is in the process of implementing rural automation schemes that will reduce customer outage hours.

ECG reported a similar trend in the duration of unplanned outages for urban customers, with 221.03 hours in 2012 versus 68 hours in 2011. Compared to the targeted unplanned outages of 60.5 hours, the negative variance was even greater at 265.3%. In 2012 , a significant portion of the urban network was weakened due to repeated switching during the energy crises of 2012. Figures for 2013 are expected to show a similar trend but the outlook for 2014 should show a declining trend even though there are still pockets of load management occasioned by inadequate generation.

NEDCO reported an improvement in the duration of unplanned outages for rural customers, with 74.6 hours in 2012 compared to 106 in the baseline year of 2011. The improvement of 31.4 hours reflects NEDCO's replacement of most of their line insulators which were previously major contributors to line faults.

In NEDCo's urban service territories, the duration of unplanned outages improved with only 40.6 hours of outages in 2012 compared to the 2011 baseline value of 102 hours. Compared to targeted 2012 outages of 61 hours, NEDCo's positive variance was 20.4 hours better than planned or 33.4%. This improvement was achieved as the result of strict adherence to scheduled maintenance programs. Specifically, NEDCo intensified the replacement of line insulators, old and overloaded cables and rotted poles.

**P.19** **Frequency of Outages – Rural and Urban.** The frequency of unplanned outages reported by ECG in rural areas showed a slight reduction of 8.7%, with 267.6 in 2012 compared to 293 in 2011. The lower frequency of unplanned outages is commensurate with the longer durations for rural customers.

In urban areas ECG reported the frequency of unplanned outages at 256.38 in 2012 compared to the 2011 baseline of 282 outages, a 9.1% improvement. As with rural customers, the lower frequency of unplanned outages is commensurate with the longer durations for urban customers

With regards to frequency of unplanned outages in rural areas, NEDCo observed an increase from the base year figure of 83 in 2011 to 106 in 2013, a 27.7% negative variance. This variance was the result of the high number of Self Help Electrification Project (SHEP) connections which contribute to higher outage rates because such extensions of the network increases line faults.

The frequency of outages in NEDCo's urban service territories for 2013 increased to 59 compared to 50 in the 2011 baseline period, a negative variance of 18%, mainly a result of the high number of SHEP connections completed in 2013. The challenge of frequent outage requests applies to the urban areas as well because some of the feeder lines which supply power to the rural areas also traverse and distribute power to urban centers.

**P.20** Deleted.

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| **Goal 5: Rural Access - improve rural access to power and effective management thereof**<br><br>5A. Expanded electricity service access for rural communities<br><br>5B. Sustainable management and operation of rural electricity systems<br><br>(Still Under Review) | ***Ahead of Schedule*** |

**Key Indicators:**

- Rural access rate (P21)
- Off-grid generation (P22)

**P.21** Ghana's National Electrification Plan which was the blue print for the expansion of access to electricity in Ghana had the goal of providing access for all communities with a population greater than 500 has achieved its primary objective. Accordingly, the urban centers are considered to be fully served and any further improvement in the National Access Rate is a reflection of improvements in rural access.

Data from the Ministry of Energy and Petroleum indicates that, national access rates as at 2013 is 75.6% which is an improvement over the 2012 access rate of 72%. Rural access rate has seen consistent improvement over the years as a result of the programs focused in improving their access. The increase in improvement of the rural and national access rate is as a result of Ghana's commitment in investing in electric generation.

With the completion of the National Electrification Plan, investments are more targeted and clearly spelt out for easy implementation to improve both rural and National access. Ghana's Policy target with regards to access to electricity is now to achieve universal access by end of 2016. In this regards, through Public Private Partnership Arrangements , Multilateral & Bilateral Sources from Development Partners including the US Government , Public Sector – Budget & Concessional Loan Facilities for "Special" Infrastructure Programs and other sources have implementing its strategies geared towards increasing access to electricity.

**P.22** Ghana's quest to increasing access has seen investment in Off-grid generation. Current off-grid generation comprises Solar Home Systems (SHS) and solar street lights in the country. The Ministry of Energy and Petroleum has reported 1.5MW as the current off-grid generation in the country as at 2013. However, Ghana has the potential of generating more off-grid megawatts and is committed to exploiting this potential**.**

=//= END SECTION ON POWER =//=